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SAITO MINORU**(54) PRODUCTION OF ALLOYED ZN-MG VAPOR
DEPOSITION-COATED STEEL SHEET**

(57) Abstract:

PURPOSE: To obtain an alloyed Zn-Mg vapor deposition-coated steel sheet with Fe diffused to the surface of a plating layer and excellent in workability and corrosion resistance.

CONSTITUTION: A continuously traveled steel strip with the surface cleaned is introduced into a vacuum chamber, in a reducing or inert atmosphere, deposited with Mg at $\approx 100^{\circ}\text{C}$ and then with Zn. An alloying heat treatment is applied to the strip immediately after leaving the

vacuum chamber at $330-600^{\circ}\text{C}$ for $\leq 10\text{sec}$ in an inert atmosphere or in the atmosphere so that the Fe is diffused from the substrate steel to the plating layer surface. The Zn-plated strip is held at $200-400^{\circ}\text{C}$ for 1-25hr by using a heating furnace independent of the vacuum chamber to apply alloying heat treatment. Otherwise, the strip before Mg vapor deposition is kept at $\approx 100^{\circ}\text{C}$, the temp. is controlled so that the Zn-deposited strip is kept at $330-500^{\circ}\text{C}$, and alloying heat treatment is conducted by the sensible heat of the strip.

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